

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An oral phototherapy apparatus comprising:
a body sized and shaped so as to fit at least partially in a user's mouth; and
~~to irradiate a portion of the oral cavity~~
~~with phototherapeutic radiation~~, the emitter being ~~capable of delivering~~ ~~configured to irradiate~~
~~phototherapeutic radiation from within the oral cavity and in the direction of to~~ a region of tissue
other than oral tissue;
wherein the emitter is configured to emit phototherapeutic radiation having at least one
wavelength at a power density sufficient to irradiate the region of tissue from within the oral
cavity.
2. (Original) The apparatus of claim 1 wherein the emitter further comprises a source of
radiation having wavelength components in at least two separate spectral bands.
3. (Original) The apparatus of claim 1 wherein the emitter further comprises at least two
sources of radiation emitting different spectral bands of radiation.
- 4-8. (Cancelled)
9. (Currently amended) The apparatus of claim 1 wherein the ~~emitter apparatus~~ is
configured ~~to irradiate a region of a mucosal lining of the oral cavity with the phototherapeutic~~
~~radiation, and configured to emit phototherapeutic radiation having a power density sufficient to~~
~~penetrate the mucosal lining, such that, upon disposition of the applicator within the mouth,~~
~~radiation from the emitter can penetrate the mucosal lining of the oral cavity and deliver~~
~~phototherapeutic energy to a region of facial tissue.~~
10. (Original) The apparatus of claim 1 wherein the apparatus further comprises a plurality of
bristles.

11. (Original) The apparatus of claim 10 wherein the bristles are substantially transparent to phototherapeutic radiation within at least one wavelength range.

12 - 14. (Cancelled)

15. (Previously Presented) The apparatus of claim 10 wherein the bristles have at least one shape, relative to an elongated direction of the bristles, selected from the group of conical, tapered, curved and spiral shapes.

16. (Cancelled)

17. (Original) The apparatus of claim 10 wherein bristles further comprise at least one element selected from the group of fluorescent, luminescent or lasing elements.

18 – 20. (Cancelled)

21. (Original) The apparatus of claim 1 wherein the apparatus further comprises a motion sensor and controller which controls the radiation emitter based on signals from the motion sensor.

22. (Original) The apparatus of claim 1 wherein the apparatus further comprises a contact sensor and controller which controls the radiation emitter based on signals from the contact sensor.

23. (Currently Amended) The apparatus of claim 1 wherein the apparatus further comprises [an] a diagnostic sensor and controller which controls the radiation emitter based on signals from the diagnostic sensor.

24. (Original) The apparatus of claim 1 wherein the apparatus further comprises at least one thermally conductive element for extracting heat from the emitter.

25. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a fluid heat transfer medium.

26. (Cancelled)

27. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a phase change material.

28. (Currently Amended) The apparatus of claim 24 wherein the apparatus further comprises a heat transfer element ~~for heating a portion of the oral cavity with waste heat from the apparatus configured to conduct heat from the apparatus to the tissue, wherein the device is further configured to induce hyperthermia in the tissue.~~

29 – 30. (Cancelled)

31. (Original) The apparatus of claim 1 wherein the body is sized and shaped so as to fit at least partially in a user's mouth and adapted to conform to the shape of at least a portion of the oral cavity.

32. (Original) The apparatus of claim 31 wherein the body is compliant to facilitate conformation to a portion of the oral cavity.

33. (Currently amended) The apparatus of claim 31 wherein the apparatus further comprises a body in the form of a mouthpiece adapted for positioning between at least a user's teeth and gums during phototherapy.

34. (Original) The apparatus of claim 31 wherein the apparatus further comprises a body adapted for placement in a position covering at least a portion of a user's tongue during phototherapy.

35. (Original) The apparatus of claim 1 wherein the apparatus further comprises a body adapted for placement in a fixed position relative to the oral cavity during phototherapy.

36. (Original) The apparatus of claim 1 wherein the apparatus further comprises an ultrasound generator for delivering acoustic energy to a target tissue site.

37. (Original) The apparatus of claim 1 wherein the apparatus further comprises a vibrating element for applying intermittent pressure to a target tissue site.

38. (Original) The apparatus of claim 1 wherein the apparatus further comprises a drug delivery port.

39. (Original) The apparatus of claim 1 wherein the apparatus further comprises an energy reflector for redirecting phototherapeutic radiation towards a target tissue site.

40. (New) The apparatus of claim 1 wherein the body comprises a generally "U"-shaped portion.

41. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in the range of approximately 280 nm to 1400 nm.

42. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in the range of approximately 590 nm -1300 nm.

43. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in the range of approximately 530-580 nm.

44. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in the range of approximately 600-650 nm.

45. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in the form of red and green light.

46. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in only one of the ranges of approximately 560-600 nm, 610-650 nm, 740-780 nm, 1040 – 1080 nm, and 1248 - 1288 nm.

47. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation in two or more of the ranges of approximately 560-600 nm, 610-650 nm, 740-780 nm, 1040 – 1080 nm, and 1248 - 1288 nm.

48. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation at a power density of approximately 1-1000 mW/cm².

49. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation at a power density of approximately 10-100 mW/cm².

50. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation at a fluence of approximately 0.06-30 J/cm².

51. (New) The apparatus of claim 1 wherein the emitter is configured to emit phototherapeutic radiation at a fluence of approximately 0.06-10 J/cm².

52. (New) An method for using an oral phototherapy apparatus comprising:
inserting at least a portion of the body of the apparatus into an oral cavity; and
irradiating a first volume of tissue with phototherapeutic radiation from within the oral cavity, wherein the tissue is not a tissue of the oral cavity.

53. (New) The method of claim 52, wherein the tissue is irradiated by passing phototherapeutic radiation through a region of oral-cavity tissue.

54. (New) The method of claim 52, wherein the region of oral-cavity tissue is a mucosal lining.

55. (New) The method of claim 52, wherein said tissue comprises at least one tissue from the group of lips, cheeks, nerve tissue, vascular tissue, hair follicles, sebaceous follicles, sebaceous glands, subcutaneous fat, muscular tissue, lymph systems, collagen, pigmented spots, cancerous tissue and lesions.

56. (New) The method of claim 52, wherein said tissue comprises at least one tissue from the group of facial tissue, optical tissue, optical cavities, sinus tissue, sinus cavities, and throat tissue.

57. (New) The method of claim 52, further comprising performing a treatment on the first volume of tissue.

58. (New) The method of claim 57, wherein the treatment is a cosmetic treatment.

59. (New) The method of claim 57, wherein the treatment is from the group of treatments for at least one of acne, permanent hair removal, temporary hair removal, removal of pigmented lesions, improvement of skin texture, improvement of skin elasticity, wrinkle reduction, and skin rejuvenation.

60. (New) The method of claim 57, wherein the treatment is from the group of treatments for at least one of tissue growth, tissue regeneration, bone regeneration, implant connection, and cancer.

61. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in the range of approximately 280 nm to 1400 nm.

62. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in the range of approximately 590 nm -1300 nm.

63. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in the range of approximately 530-580 nm.

64. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in the range of approximately 600-650 nm.

65. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in the ranges of approximately red and green light.

66. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in only one of the ranges of approximately 560-600 nm, 610-650 nm, 740-780 nm, 1040 – 1080 nm, and 1248 - 1288 nm.

67. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation in two or more of the ranges of approximately 560-600 nm, 610-650 nm, 740-780 nm, 1040 – 1080 nm, and 1248 - 1288 nm.

68. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation at a power density of approximately 1-1000 mW/cm².

69. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation at a power density of approximately 10-100 mW/cm².

70. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation at a fluence of approximately 0.06-30 J/cm².

71. (New) The method of claim 52, wherein the tissue is irradiated with phototherapeutic radiation at a fluence of approximately 0.06-10 J/cm².

72. (New) The method of claim 52, further comprising inducing hyperthermia into the first volume of tissue.

73. (New) The method of claim 72, wherein the first volume of tissue is heated to a temperature less than or equal to approximately 43 °C.

74. (New) The method of claim 72, wherein the first volume of tissue is heated for a duration of approximately 0.5-3 minutes.

75. (New) The method of claim 52, further comprising irradiating a second region of oral tissue.

76. (New) The method of claim 52, further comprising irradiating a second volume of tissue with phototherapeutic radiation.

77. (New) The method of claim 76, wherein the tissue of the second volume is of a different type than the tissue of the first volume.

78. (New) The method of claim 76, wherein the tissue of the second volume is of the same type as the tissue of the first volume.

79. (New) The method of claim 76, wherein the phototherapeutic radiation used to irradiate the second volume has the same parameters as the phototherapeutic radiation used to irradiate the first volume of tissue.

80. (New) The method of claim 76, wherein the phototherapeutic radiation used to irradiate the second volume has at least one parameter from the group of wavelength, fluence, power

density and duration that is different from the parameters of phototherapeutic radiation used to irradiate the first volume of tissue.